

## **REMARKS**

**[0001]** Applicant respectfully requests reconsideration and allowance of all of the claims of the application. The claims are amended herein as follows:

### **Claims pending**

- Before this Amendment: Claims 1-5, 10, 11, 13-15, 17, 21-23, 25 and 30-37
- After this Amendment: Claims 1-5, 10, 11, 13-15, 17, 21-23, 25 and 30-37

**Non-Elected, Canceled, or Withdrawn claims:** None

**Amended claims:** 10, 11, 13, 14, 21-23, 25, 30, and 33-35

**New claims:** None

### **Claim Amendments**

**[0002]** Without conceding the propriety of the rejections herein and in the interest of expediting prosecution, Applicant amends claims 10, 11, 13, 14, 21-23, 25, 30, and 33-35 herein. Applicant amends claims to improve readability of the claims. Such amendments are made to expedite prosecution and more quickly identify allowable subject matter. Such amendments are merely intended to highlight the claimed features, and should not be construed as further limiting the claimed invention in response to the cited reference.

## **Substantive Matters**

### **Claim Rejections under § 112 2<sup>nd</sup> ¶**

**[0003]** Claims 10 and 35-37 stand rejected under 35 U.S.C. § 112, 2<sup>nd</sup> ¶, as allegedly being indefinite. Applicant respectfully traverses this rejection. Furthermore, in light of the amendments presented herein, Applicant submits that these rejections are moot. Accordingly, Applicant asks the Examiner to withdraw these rejections.

**[0004]** Specifically, the rejection states that, “the claimed method fails to include any procedural steps to constitute a method that leads to algebraizing a syntax tree.” (Office Action, page 3.) Claim 10 is amended herein to recite, “performing a plurality of operations, including constant folding, at each of said plurality of nodes.” Claim 35 is amended herein to move the claimed, “performing at least two operations...” from the preamble to the body of the claim.

### **Claim Rejections under § 101**

**[0005]** Claims 11, 13, 14, 15, 17, 21, 22, 23, 25, 30, 32 and 35 stand rejected under 35 U.S.C. § 101. Applicant respectfully traverses this rejection. Furthermore, in light of the amendments presented herein, Applicant respectfully submits that these claims comply with the patentability requirements of §101 and that the §101 rejections should be withdrawn. Applicant further asserts that these claims are allowable. Accordingly, Applicant asks the Examiner to withdraw these rejections.

**[0006]** The Office Action indicates that claim 11 is rejected, and that claims 13-15, 17, 32, and 35 are rejected based on their dependence on claim 11. (Office Action, pages 2-3.) However, claim 35 is not dependent upon claim 11. Furthermore, claim 33 is

dependent upon claim 11. Applicant assumes that the inclusion of claim “35” is an error, and was intended to read claim “33”. The rejection is addressed based on this assumption.

**[0007]** Claim 11 is amended herein to include, “a processor; a memory; a structured query language (SQL) algebrizer, stored in the memory and executed on the processor...” As such, Applicant submits that claim 11 is directed to statutory subject matter.

**[0008]** Claims 21 and 30 are amended herein to each recite, “A computer-readable medium comprising computer-readable instructions that, when executed by a processor, direct a computing device to perform a method for algebrizing..., said method comprising...” As such, Applicant submits that claims 21 and 30 are directed to statutory subject matter.

**[0009]** If the Examiner maintains the rejection of these claims, then Applicant requests additional guidance as to what is necessary to overcome the rejection.

## **Anticipation Rejections**

**[0010]** Applicant submits that the anticipation rejections are not valid because, for each rejected claim, no single reference discloses each and every element of that rejected claim.<sup>1</sup> Furthermore, the elements disclosed in the single reference are not arranged in the manner recited by each rejected claim.<sup>1</sup>

### **Based upon Gottlob**

**[0011]** Claims 1-5, 10, 11, 13-15, 17, 21-23, 25 and 30-37 stand rejected under 35 U.S.C. § 102(e) as allegedly being anticipated by *Gottlob, et al.*, US Patent No. 7,162,485 (issued January 9, 2007), herein referred to as, "Gottlob". Applicant respectfully traverses the rejection of these claims. Based on the reasons given below, Applicant asks the Examiner to withdraw the rejection of these claims.

### **Independent Claim 1**

**[0012]** Applicant submits that Gottlob does not anticipate this claim because it does not disclose the following elements as recited in this claim (with emphasis added):

A method comprising:

**identifying a syntax tree representation of a relational database query**, wherein the syntax tree comprises a plurality of nodes;

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<sup>1</sup> "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987); also see MPEP §2131.

algebraizing the syntax tree representation of the relational database query into a relational algebra representation by performing at least two operations in a single pass through the syntax tree representation, wherein at least one of the at least two operations is selected from a group of operations comprising:

- table and column binding;
- aggregate binding;
- type derivation;
- constant folding;
- property derivation; and
- tree translation.

**[0013]** As stated in the first paragraph of the Summary, Gottlob describes, “methods, systems and computer-program products for the efficient evaluation of XPath expressions over XML documents.” However, an XPath expression is not equivalent to a syntax tree representation of a relational database query.

**[0014]** In rejecting claim 1, the Examiner cites Gottlob, col. 1, lines 27-28; col. 12, lines 1-2; col. 12, lines 15-20; and col. 19, lines 10-12. (Office Action, page 4.)

**[0015]** Gottlob, col. 1, lines 25-30 states (emphasis added):

XPath has been proposed by the W3C [W4] primarily as a practical language for selecting nodes from XML document trees. But it is also designed to be used for formulating expressions that evaluate to a string, a number or a Boolean value.

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<sup>1</sup> See *In re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

**[0016]** Gottlob, col. 12, lines 1-2 states, “the number of expressions to be considered is fixed with the parse tree of a given query.”

**[0017]** Gottlob, col. 12, lines 15-20 states:

2. Top-down processing. The computation proceeds top-down along the parse tree (expression tree) of the query, passing tables (or ordered lists, or “vectors”, for that matter) of contexts down and passing up mating tables of values when returning from the descent.

**[0018]** Gottlob, col. 19, lines 10-12 states:

Finally, note that using arguments relating the top-down method of this section with (join) optimization techniques in relational databases, one may argue that the context-value table principle is also the basis of the above mentioned polynomial-time bound of the top-down evaluation method.

**[0019]** It appears that col. 19, lines 10-12 is being interpreted as indicating an equivalence between an XPath query and a relational database query. However, this section of Gottlob merely indicates that arguments can be made that there is some relationship between the described top-down method of evaluating an XPath query, and join optimization techniques used in relational databases. The fact remains, however, that an XPath query is *not* a relational database query.

**[0020]** The Response to Arguments states:

The XPath limitation in Gottlob is referred to XPath processor (Col. 12, line 13; Col. 19, lines 15-24) being one of the embodiments, which evaluates

XPath queries. Applicant's above explanation does not prove that Gottlob either excludes or fails to obtain relational database.

In fact, Col. 19, lines 10-12, Gottlob teaches that the top-down method used in Gottlob is joined with relational databases.

**[0021]** Applicant respectfully disagrees. Gottlob describes processing of an XPath query – Gottlob does not describe processing of a relational database query, and, as stated above, the two are not equivalent.

**[0022]** Col. 12, lines 9-15 states:

Given that the size of each of the context-value tables has a polynomial bound and each of the combination steps can be effected in polynomial time (all of which we can assure in the following), query evaluation in total under our principle also has a polynomial time bound. Note that the number of expressions to be considered is fixed with the parse tree of a given query.

**[0023]** Col. 19, lines 15-24 states:

#### Improving Existing XPath-Processors

Those skilled in the art will recognize that an embodiment of the disclosed invention can also be obtained from an existing method or system for evaluating XPath queries such as, e.g., IE6, Saxon, Xalan-C++, Xalan-Java, XT (cf. [H1, H2, H3, H4]), etc. by improving said systems as follows:

During the evaluation process of some input XPath query Q, all of the existing methods or systems repeatedly evaluate subexpressions e of Q ...

**[0024]** The emphasis on the described processor still does not indicate that Gottlob discloses, "identifying a syntax tree representation of a relational database query," and,

“algebrizing the syntax tree representation of the relational database query...,” as recited in the claims.

**[0025]** Gottlob describes a processor for evaluating XPath queries, which are *not* equivalent to relational database queries. Consequently, Gottlob does not disclose all of the elements and features of this claim. Accordingly, Applicant asks the Examiner to withdraw the rejection of this claim.

*Independent Claims 10, 11, 21, 30, and 35*

**[0026]** Each of these claims recites language similar to that discussed above with reference to claim 1. Accordingly, Applicant submits that Gottlob does not anticipate these claims for reasons similar to those presented above with reference to claim 1.

**[0027]** Specifically, the claims are directed to algebrizing a syntax tree representation of a relational database query, while Gottlob describes a processor for evaluating XPath queries, which are *not* equivalent to relational database queries. Consequently, Gottlob does not disclose all of the elements and features of these claims. Accordingly, Applicant asks the Examiner to withdraw the rejection of these claims.

**Dependent Claims**

**[0028]** In addition to its own merits, each dependent claim is allowable for the same reasons that its base claim is allowable. Applicant requests that the Examiner withdraw the rejection of each dependent claim where its base claim is allowable.



## Conclusion

[0029] All pending claims are in condition for allowance. Applicant respectfully requests reconsideration and prompt issuance of the application. If any issues remain that prevent issuance of this application, the **Examiner is urged to contact the undersigned representative for the Applicant before issuing a subsequent Action.**

Please call or email me at your convenience.

Respectfully Submitted,

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